

# How heat helps to treat cancer

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Research at Bangor University has identified a switch in cells that may help to kill tumors with heat. Prostate cancer and other localized tumors can be effectively treated by a combination of heat and an anti-cancer drug that damages the genes. Behind this novel therapy is the enigmatic ability of heat to switch off essential survival mechanisms in human cells. Although thermotherapy is now more widely used, the underlying principles are still unclear.

In a recent publication in the [Journal of Cell Science](#) researchers based in the School of Biological Sciences report now that heat modulates these survival systems by promoting the production of a novel protein. Intriguingly, this protein is only produced when elevated temperatures activate a gene that hides inside another gene.

The leader of the [Genome Biology](#) group, Dr Thomas Caspari says: "The discovery is reminiscent of a Russian doll where a set of smaller wooden figures is placed inside a larger doll. The existence of such hidden genes may explain why the human genome has a much smaller number of genes than initially expected. Our work may also help to improve heat-treatment of cancer for the benefit of patients. This research success was a real team effort made possible by the generous funding from Cancer Research Wales and the European Leonardo DaVinci Program."

## **More information:**

<http://jcs.biologists.org/content/early/2012/07/10/jcs.104075.abstract>

Provided by Bangor University

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